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EVE 亿纬锂能



PROFESSIONAL

LITHIUM BATTERIES

Stock Code：300014.SZ | www.evebattery.com

BEST BATTERY

Energizing the IoT world



COMPANY INTRODUCTION



EVE is dedicated to be a world leader in the designing and manufacturing of advanced lithium batteries.

National and Local Joint Engineering Research Center of Key Technology and Material of Lithium Battery
National High-tech Enterprise
National Intellectual Property Advantage Enterprises
725 national and international patents, Some of which were granted the "Chinese Patent Award of Excellence",

EVE has a comprehensive 6 Sigma quality system along with the following certifications: ISO9001, ISO14001, ISO/TS16949, CE, UN, UL, IEC, CB, OHSAS18001 and ATEX.
All product meet the RoHS and REACH standards.

Products are widely used in intelligent meter, automotive electronic, security, oil & gas, intelligent household data communication areas, intelligent transportation, tracking location, consumer electronic, GPS & tracking devices, etc.

Vision

Provide the Best Lithium Battery in the World, to be a Technology Leader!

Mission

Provide worldclass Technical Support & unrivalled Quality Products!

Core values

Pursue excellence Quality first Create value
Dependability Teamwork Respect individuals



Dr. Liu Jincheng Founder & CEO

Senior expert in Lithium Technology, Engaged in R&D and lithium battery manufacturing For over 30 years.

Adjunct Professor, Wuhan University.

Awarded the "Special State Subsidy award" from the State Council.

亿纬锂能必将成为一个对社会有较多贡献的组织

刘金成






EVE YOUR TRUSTED PARTNER

For high reliability of lithium batteries, to meet customer's application requirements

Military & defence
Portable radio communications, night vision equipment &thermal imagers, tactical engagement simulators, precision gunnery simulators, chemical agent detectors, field radars, torches & lamps

Utility Metering
Automatic meter reading (AMR), advanced metering infrastructure (AMI), traditional metering, smart metering systems for electricity, water, gas, and heat, fixed telecommunication devices for Wide Area Net work

Oil & gas
Measurement while drilling (MWD),logging while drilling (LWD),well completion &well production tools, subsea equipments, explosive atmosphere devices, seismic survey equipment, pipeline inspection gauges(PIG)

Security & alarms
Home and pool surveillance, smoke and CO_2 , detectors, locking systems, video surveillance

Medical
Defibrillators, respirators & oxygen concentrators, monitoring equipment, mobile diagnostic equipment ,infusion pumps, telemedicine equipment

Professional electronics
Professional handheld tools and portable devices, professional displays, ticketing & information kiosks, vehicle telematics

Tracking
Satellite positioning & navigation, Radio Frequency Identification-enabled(RFID) asset tracking, tollgate transponders, LoJack systems

Marine & signaling
Buoys, beacons, lighthouses, safety jackets, oceanography

Machine to Machine (M2M)
Wireless sensor networks (WSN), industrial automation, intelligent transport systems, building automation, home area networks (HAN), smart grids, smart energy management systems






Lithium primary batteries				
$Li\text{-}MnO_2$	$Li\text{-}SOCl_2$	High Temperature $Li\text{-}SOCl_2$	$Li\text{-}FeS_2$	Battery capacitor
Military & defence	Military & defence		Military & defence	Military & defence
Utility Metering	Utility Metering		Utility Metering	Utility Metering
		Oil & gas		
Security & alarms	Security & alarms		Security & alarms	Security & alarms
Medical	Medical		Medical	Medical
Professional electronics	Professional electronics	Professional electronics	Professional electronics	Professional electronics
Tracking	Tracking		Tracking	Tracking
Marine & signaling	Marine & signaling		Marine & signaling	Marine & signaling
Machine to Machine (M2M)	Machine to Machine (M2M)		Machine to Machine (M2M)	

LITHIUM PRIMARY BATTERIES



Li-SOCl$_2$ Batteries

Lithium thionly chloride batteries have a lithium metal anode and thionly chloride($SOCl_2$) as active cathode; it has the highest specific capacity and specific energy in all practical chemical power sources and is widely used as a new energy system in electronic devices.

Battery structure



Applications

- AMR utility metering (Electricity, Gas, Water, Heat meter)
- Alarms and security wireless devices
- TPMS, ETC, E-call
- Professional electronics, Medical
- GPS Tracking, RFID
- Mobile asset tracking
- Alarms and security wireless
- Military radio communication

Key Feature

- High and Stable Operating Voltage; nominal voltage 3.6V and the operating voltage throughout the whole lifetime can maintain significant smooth.
- Wide Operating Temperature Range: -60℃ to +85℃.
- High Energy Density: 650wh/kg and1280wh/dm3, the highest among the primary cell.
- Low self-discharge rate : (less than≤1% per year at 20℃). So it can store above 10 years at ambient temperature.
- High safety, non-polluting, meeting UL and UN-related safety requirements; without mercury, cadmium and other heavy metals.



Product list

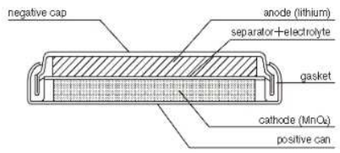
Product list	Size	Nominal voltage (V)	Nominal capacity (mAh)	Max. continuous current (mA)	Max. pulse current (mA)	Operating temperature (℃)	Max. outside dimension (mm)	Weght /g
Cylindrical (Bobbin type)								
ER14250	1/2AA	3.6	1200	15	50	-60~+85℃	14.5x25.4	10
ER14335	2/3AA	3.6	1650	35	75	-60~+85℃	14.5x33.5	12
ER14505	AA	3.6	2700	50	150	-60~+85℃	14.5x50.5	19
ER17505	A	3.6	3600	130	180	-60~+85℃	17.5x50.5	26
ER18505	A	3.6	4000	130	180	-60~+85℃	18.5x50.5	28
ER26500	C	3.6	8500	150	300	-60~+85℃	26.2x50.0	52
ER34615	D	3.6	19000	230	400	-60~+85℃	33.1x61.5	100
ER341245	DD	3.6	35000	420	500	-60~+85℃	33.1x124.5	195
Cylindrical (Bobbin pulse type)								
ER14250V	1/2AA	3.6	1200	15	100	-60~+85℃	14.5x25.4	10
ER14505V	AA	3.6	2600	100	200	-60~+85℃	14.5x50.5	19
Cylindrical (Bobbin type, safe-plus series)								
ER14250H	1/2AA	3.6	1200	15	50	-60~+85℃	14.5x25.4	10
Wafer cells								
ER22G68	BEL	3.6	400	5	20	-60~+85℃	22.6 x 8.0	6
ER32L65	1/10D	3.6	1000	10	50	-60~+85℃	32.9 x7.1	19
ER32L100	1/6D	3.6	1700	10	50	-60~+85℃	32.9 x10.5	24
Prismatic cells								
EF651615	LTC-3PN	3.6	400	5	20	-60~+85℃	16.8x15.8x6.8	5
EF651620	LTC-5PN	3.6	550	10	20	-60~+85℃	16.8x20.1x6.8	6
EF651625	LTC-7PN	3.6	800	10	30	-60~+85℃	16.8X25.8x6.8	8
EF702338	LTC-16N	3.6	1600	20	50	-60~+85℃	23.3x38.3x7.2	19
Profession TPMS cells(coin and prismatic cell)								
ER1860		3.6	280	5	15	-60~+125℃	18.2x6.5	5.5
ER2450T		3.6	500	5	20	-60~+125℃	24.5X6.2	9
EF651615T	LTC-3PN	3.6	400	5	20	-60~+125℃	16.8x25.8x6.8	5
EF651625T	LTC-7PN	3.6	750	10	30	-60~+125℃	16.8x25.8x6.8	8

Li-MnO_2 Batteries

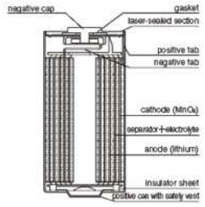
Lithium manganese dioxide cells have a metallic Lithium cathode (the lightest of all the metals) and a solid manganese dioxide anode, immersed in a non-corrosive, non-toxic organic electrolyte. They deliver a voltage of 3V and are cylindrical, coin and soft pack in shape

Battery structure

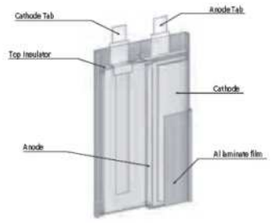
Coin cell construction



Spiral type construction



Thin cell construction



Applications

- Motherboard, RTC/CMOS power
- Remote control, RKE (Remote Keyless Entry)
- Hazardous gas sensor, Temperature and Humidity monitor
- Electronic access control systems
- Smoke detector, PIR
- High-end electronic toys ,RC model
- Utility meter (Electricity, Gas, Water Meter)
- Medical equipment ,Healthcare equipment
- Logistics identification and tracking systems
- ETC(Electronic Toll Collection),TPMS
- Electronic tags, Secure card
- RFID

Key Feature

- I operating voltage:3.0v
- Operating temperature: -40~+125℃.
- Minimal voltage delay
- lowest self-discharge compatible with long storage duration and extended operation life
- Excellent resistance to corrosion
- Superior pulse cabability
- UL Recognized(File number MH28717)
- RoHS Compliance







Product list

Product list	Nominal voltage (V)	Nominal capacity (mAh)	Max. continuous current (mA)	Max. pulse current (mA)	Operating temperature (℃)	Max. outside dimension (mm)	Weght /g
Cylindrical (Spiral type)							
CR2	3	850	1000	2000	-40~+85℃	15.6X27.0	13
CR17335	3	1500	700	2000	-40~+85℃	17.0x33.5	17
CR123A	3	1500	1500	3000	-40~+70℃	17.0x34.5	17
CR17450	3	2400	1500	3000	-40~+85℃	17.0x45	23
CR-P2	6	1500	1500	3000	-40~+85℃	35.0x19.5x36.0	42
CR14250SE	3	950	7	70	-40~+85℃	14.5x25.0	11.5
CR17335SE	3	2000	10	1000	-40~+85℃	17x33.55	18
Coin cell							
CR1225	3	50	2	5	-20~+70℃	12.5x2.5	1
CR2016	3	80	3	15	-20~+70℃	20.0x1.6	1.8
CR2025	3	160	3	15	-20~+70℃	20.0x2.5	2.5
CR2032	3	225	3	15	-20~+70℃	20.0x3.2	3.1
CR2430	3	280	6	25	-20~+70℃	24.5x3.0	4.5
CR2450	3	600	6	25	-20~+70℃	24.5x5.0	6.5
CR3032	3	500	6	25	-20~+70℃	30.3x3.2	7.5
CR2477	3	1000	6	25	-20~+70℃	24.5x7.7	8
High temperature for TPMS							
CR2450HT	3	525	3	15	-40~+125℃	24.5x5.0	7
CR2050HT	3	325	3	15	-40~+125℃	20.5x5.0	5
Product list	Nominal voltage (V)	Nominal capacity (mAh)	Max. continuous current (mA)	Max. pulse current (mA)	Operating temperature (℃)	Max. outside dimension (mm)	Weght /g
9V cell							
CR9V-P	9	1200	120	400	-40~+85℃	26.2x17.2x48.8	43
Product list	Nominal voltage (V)	Nominal capacity (mAh)	Max. continuous current (mA)	Max. pulse current (mA)	Operating temperature (℃)	Max. outside dimension (mm)	Weght /g
Thin cell							
CF244040	3	900	10	50	-20~+75℃	2.4x40.0x40.0	7.6
CF102836	3	200	0.5	15	-10~+60℃	1.0x28.0x36.0	1.8
CF042039	3	25	0.25	5	-10~+60℃	0.45x20.5x43.0	0.6

Li-FeS2 Batteries

Lithium-iron disulfide batteries are a kind of lithium primary formed by winding, which use iron disulfide for the cathode, lithium for the anode, and a lithium salt in an organic solvent blend as the electrolyte.
Since lithium-iron disulfide batteries have an operating voltage platform of 1.5V, they have interchangeability with alkaline batteries, Ni-MH batteries having the same size.
Lithium-iron disulfide batteries have a higher operating voltage than alkaline and rechargeable nickel metal hydride (NiMH) batteries and flatter discharge profile versus alkaline. These characteristics result in higher energy density (Wh/L) and specific energy (Wh/kg), especially in heavier drain applications where the operating voltage differences are the greatest.
In addition, lithium-iron disulfide batteries have lighter weigh, superior leakage resistance , greater service advantage at low temperature than alkaline batteries , so they will gradually become the best power supply for portable electronic products.

Key Feature

- Provides longer service than standard alkaline batteries in moderate to heavy drain applications
- Far greater power, higher operating voltage and flatter discharge curve than standard alkaline batteries
- Superior leakage resistance compared to alkaline batteries
- Greater service advantage over alkaline batteries at low temperature extremes operating at -40℃
- Weigh 1/3 less than standard alkaline batteries
- Environmental-friendly ,no added mercury, cadmium, or lead

Applications

- Digital camera
- Portable medical equipment
- High-power toy
- Smart home
- Require for 1.5V battery of civilian market






Product technology parameters

Item/Type	AAA	AA
Nominal capacity(the mid-value)	1100mAh (100mA,0.8V off)	3000mAh (200mA,0.8V off)
Nominal voltage	1.5V	1.5V
Max. constant current	1500mA	2000mA
Max. pulse current (2 sec on / 28 sec off)	2000mA	3000mA
Operating temperature	-40~+60 C	-40~+60 ℃
Weight	Approx. 6.2g	Approx.14.2g
Typical Li content	≤0.6g	≤1g
Typical IR (depending on method)	≤500mΩ	70~500mΩ

Super Pulse Battery Capacitor

Super Pulse Capacity(SPC), designed and manufactured by EVE independently, is a kind of energy storage device which can realize instantaneous large current discharge and enable pulse discharge in a wide temperature range of -40 °C to + 85 °C. The ER&SPC pulse power supply provided by EVE, which combines the long-life lithium-thionyl chloride ($Li/SOCl_2$) battery and the super pulse battery capacitor together, is an ideal power solution for applications with long standby time and high current pulse discharge requirements. In terms of design, the application of the unique safety valve and sealing mode can ensure the safety and reliability of this combined power supply during use.

Key Feature

- Long operating life
- Minimized passivation effect
- Low self-discharge
- Wide operating temperature
- Utilized electric characteristics from both ER batteries and SPC(S)
- 10 times pulse capability over the sole –ER batteries solution
  Intrinsic safety, compliance with ATEX,
- UL1642,UN38.3 and etc

Application

- ETC(Electronic Toll Collection)
- AMR、AMI
- Tracking system
- E-CALL
- GPS
- RFID
- Alarms and security wireles






Spc product list

Model	Size (mm) Diameter /height	Max. charging volatge (V)	Capacity (3.6V) (As)	Max. pulse current (mA)		Cut off voltage (V)	Internal resistance (mΩ)	Termina
				continuous	pulse			
SPC 0920	Φ9.0X21.0	3.95	30	150	500	2.5	500	S T 2PT 3PT
SPC 1520	Φ15.1X21.0	3.95	140	500	2000	2.5	150	S T 2PT 4PT
SPC 1530	Φ15.1X27.0	3.95	250	750	3000	2.5	130	S T 2PT 5PT
SPC 1550	Φ15.1X51.0	3.95	560	2000	5000	2.5	80	S T 2PT 6PT

Suggested combination of ER+SPC

Model	Cell size Ref	Nominal voltage (V)	Nominal capacity (mAh)	Max. pulse current (mA)	Size (mm) Diameter /height
ER+SPC battery capacitor					
ER 14250+SPC 1520	1/2AA+2/5AA	3.6	1200	1000	Φ16.5*75.0
ER 26500+SPC 1520	C+2/5AA	3.6	8500	1000	Φ29.0*67.0
ER 34615+SPC 1520	D+2/5AA	3.6	19000	1000	Φ34.0*78.0
ER 14250+SPC 1550	1/2AA+AA	3.6	1200	3000	55.0*32.0*16.0
ER 26500+SPC 1550	C+AA	3.6	8500	3000	55.0*44.0*28.0
ER 34615+SPC 1550	D+AA	3.6	19000	3000	64.0*55.0*35.0

High temperature Li-SOCl$_2$ Batteries

High temperature lithium thionly chloride battery with high energy density and low self-discharge rate, with the special structure and formula design, it is working temperature range between - 40℃ to + 145℃. the battery have anti vibration and shock resistance and heat dissipation characteristics. Mainly used in the field of oil and natural gas drilling, exploration, pipeline detection.

Cylindrical cells

Model	Nominal Voltage (V)	Nominal Capacity (Ah)	Max. continuous current(mA)	Operating temperature (℃)	Diameter (mm)	Height (mm)	Weight (g)
Cylindrical (Spiral type)							
ER14250MR-145 (1/2AA)	3.6	0.8	40	-40～+145℃	14.5	25.4	10
ER14505MR-145 (AA)	3.6	1.6	80	-40～+145℃	14.5	50.5	19
ER26500MR-145 (C)	3.6	6.5	230	-40～+145℃	25.4	50	60
ER32615MR-145 (D)	3.6	13	700	-40～+145℃	32.2	61.5	108
ER26760MR-145 (3/2C)	3.6	11	800	-40～+145℃	25.4	76	85
ER21102MR-145 (SLIM CC)	3.6	10	400	-40～+145℃	21	102	80
ER26102S-145 (CC)	3.6	16	1200	-40～+145℃	25.4	102	105
ER321250MR-145 (DD)	3.6	28	2000	-40～+145℃	32.2	126.5	210

MWD High Temperature Battery packs







Key feature

- Long operating life
- Heat dissipation material and structure design
- Low self-discharge
- Wide operating temperature
- Hermetic glass to metal sealing
- Compliant with IEC60086-4 safety standard

Apllication

- Downhole oil & gas
- Measure while drilling
- Logging while drilling
- Pipeline inspection gauges
- Tracking systems
- Sensor systems

Battery Pack list

Model	Nominal Voltage (V)	Operating time (h)	Diameter (mm)	Tube Length (mm)	Overall Length (mm)	Curve	Operating temperature (℃)
HL-145 MWD	28.8	≥180	37.3±0.2	1188±2	1590±5	≤1°	-40℃～+145℃
HF-145 MWD	28.8	≥180	37.3±0.2	1188±2	1590±5	≤1°	-40℃～+145℃
HQ-145 MWD	28.8	≥180	37.3±0.2	1192±2	1630±5	≤1°	-40℃～+145℃

General Recommendations

This page is not intended to provide all the information that you will need to be able to work safely with EVE batteries, but only to help facilitate site-specific guidance in accordance with local regulations.
If there are questions around the safe handling of EVE cells or batteries, please contact us.

Storage

- Store batteries in a cool (preferably less than 30℃), dry and well-ventilated area.
- Keep away from moisture, source of heat , open flames.
- Keep batteries in their original packaging until use.
- Do not jumble batteries.
- Do not apply pressure that may deform the batteries.
- Appropriate fire extinguishing means should be available.
- Storage areas should be equipped with sprinklers.
- Appropriate personal protective equipment should be available (gloves, glasses, work coat…).

Handling

- Do not mix batteries of different types and brands.
- Do not directly heat or solder.
- Do not mix new and used batteries.
- Do not dismantle.
- The most frequent form of handling abuse during receiving, inspection and storage is inadvertent short-circuiting. Control measures to protect against this form of abuse should be implemented throughout the workplace. Issues associated with
  - Cover all conductive work surfaces with an insulating material
  - Work areas should be free of sharp objects that could puncture the insulating material
  - Never disassemble a cell or battery pack or attempt to replace a blown fuse
  - Conductive materials (jewelry, etc.) should not be worn by personnel handling cells and batteries
  - Cells should be stored in their original packaging or by similar means
  - Cells should be moved in trays using pushcarts to reduce the probability of dropping.
  - Dropped cells or batteries should be treated as a potential hot cell and must be segregated from the lot/batch
  - All inspection tools should be non-conductive, or covered with a non-conductive material
  - Cells should be inspected for physical damage
  - Open-circuit-voltage (OCV) should be checked
  - After a cell has been inspected, it should be returned to its storage packaging

Installation and replacement

- Install only new unused batteries, bearing the same date code, coming from the same manufacturer and being of the same model.
- Observe polarities during installation.
- Follow EVE recommendations regarding maximum deliverable currents and operating temperature range.
- Only use batteries of a type that has been homologated by the device manufacturers in which they are fitted.

Disposal

- Dispose of batteries in accordance with local regulations.
- Secure terminals to prevent short-circuiting.
- Package each cell or battery in a manner that prevents shorting with the container of another cell/battery.
- Package leaking cells /batteries in a manner that contains the leak and use specific equipment to handle these products (gloves, safety glasses, appropriated working clothing, respirator, sealable plastic bags).
- Use packaging material that is in compliance with local regulations.

Specific recommendations for lithium batteries—Safety with primary lithium batteries

- Do not short circuit.
- Do not recharge.
- Do not puncture.
- Do not incinerate.
- Do not crush.
- Do not discharge.
- Do not expose content to water.
- Do not heat above 100℃ (not applicable for the High temperature battery).